

IN THE CLAIMS

Please cancel claims 2, 12, 17, 18, 22, 23, 32, 35 thru 37, 39 thru 41, 43 and 45 thru 47 without prejudice or disclaimer, amend claims 1, 3 thru 9, 13 thru 16, 19 thru 21, 24 thru 31, 33, 34, 38, 42 and 44, and add claims 48 and 49, as follows:

1           1. (Currently Amended) An electrophotographic image printing method for an  
2           electrophotographic imaging apparatus, comprising the steps of:

3           providing an electrophotographic imaging apparatus, the electrophotographic  
4           imaging apparatus including: a charge roller; a developer roller; a laser scanning unit; a  
5           transfer roller; an organic photoconductor; a power supply unit for supplying power to the  
6           charge roller, the developer roller, the laser scanning unit, and the transfer roller; and a  
7           controller for controlling the power supply unit, the charge roller, the developer roller,  
8           the laser scanning unit, the transfer roller, and the organic photoconductor;

9           selecting a resolution for electrophotographic printing;

10          charging the organic photoconductor by selectively applying, to the charge roller,  
11          a charge voltage corresponding to the resolution selected for the electrophotographic  
12          printing;

13          setting the charge voltage applied to the charge roller to be relatively higher in  
14          magnitude for a lower level of the resolution selected than for a higher level of the  
15          resolution selected;

16          forming an electrostatic latent image on the charged organic photoconductor by

17 means of the laser scanning unit and applying toner particles adhering to the developer  
18 roller to the electrostatic latent image to form a visible image; and  
19 transferring the visible image formed on the organic photoconductor to a print  
20 medium.

Claim 2. (Canceled)

1 3. (Currently Amended) The method of claim 1, ~~further comprised of:~~ wherein the  
2 resolution selected ~~[[being]]~~ is any one of 600 dpi. and 1200 dpi.

1 4. (Currently Amended) The method of claim 1, wherein ~~further comprised of:~~  
2 ~~applying~~ a charge voltage of -1.35 kV is applied to the charge roller as the charge voltage  
3 when the resolution selected is 1200 dpi., and ~~applying~~ a charge voltage ~~to the charge~~  
4 ~~roller~~ of -1.4 kV is applied to the charge roller as the charge voltage when the selected  
5 resolution is 600 dpi.

1 5. (Currently Amended) The method of claim 1, wherein ~~further comprised of:~~  
2 ~~applying selectively~~ the charge voltage is selectively applied to the charge roller to  
3 reduce a gray pattern level variation.

1 6. (Currently Amended) ~~[[The]]~~ An electrophotographic printing method of claim

5, ~~further comprised of: reducing the~~ for an electrophotographic imaging apparatus,  
comprising the steps of:

providing an electrophotographic imaging apparatus, the electrophotographic  
imaging apparatus including: a charge roller; a developer roller; a laser scanning unit; a  
transfer roller; an organic photoconductor; a power supply unit for supplying power to the  
charge roller, the developer roller, the laser scanning unit, and the transfer roller; and a  
controller for controlling the power supply unit, the charge roller, the developer roller,  
the laser scanning unit, the transfer roller, and the organic photoconductor;

selecting a resolution for electrophotographic printing;

charging the organic photoconductor by selectively applying, to the charge roller,  
a charge voltage corresponding to the resolution selected for the electrophotographic  
printing;

forming an electrostatic latent image on the charged organic photoconductor by  
means of the laser scanning unit and applying toner particles adhering to the developer  
roller to the electrostatic latent image to form a visible image; and

transferring the visible image formed on the organic photoconductor to a print  
medium;

wherein a gray pattern level variation at a low resolution is reduced by applying a  
charge voltage to the charge roller that is relatively ~~increased~~ large in magnitude ~~with~~  
~~respect~~ relative to a charge voltage applied to the charge roller to reduce the gray pattern  
level variation at a high resolution.

1           7. (Currently Amended) The method of claim 1, further ~~comprised~~ comprising the  
2 step of:

3           selectively adjusting the charge voltage applied to the charge roller ~~corresponding~~  
4 in correspondence to the resolution selected for the electrophotographic printing to  
5 reduce image concentration variation.

1           8. (Currently Amended) An electrophotographic printing method for an  
2 electrophotographic imaging apparatus, comprising the [[step]] steps of:

3           providing an electrophotographic imaging apparatus, the electrophotographic  
4 imaging apparatus including: a charge roller; a developer roller; a laser scanning unit; a  
5 transfer roller; an organic photoconductor; a power supply unit for supplying power to the  
6 charge roller, the developer roller, the laser scanning unit, and the transfer roller; and a  
7 controller for controlling the power supply unit, the charge roller, the developer roller,  
8 the laser scanning unit, the transfer roller, and the organic photoconductor[[:]];:

9           selecting a print mode for electrophotographic printing;

10          charging the organic photoconductor by selectively applying, to the charge roller,  
11 a charge voltage [[whose]] having a magnitude which is dependent upon the print mode  
12 selected for the electrophotographic printing;

13          forming an electrostatic latent image on the charged organic photoconductor by  
14 means of the laser scanning unit and applying toner particles adhering to the developer

15 roller to the electrostatic latent image to form a visible image; and

16 transferring the visible image formed on the organic photoconductor to [[said]] a  
17 print medium;

18 wherein a charge voltage of -1.4 kV is applied to the charge roller as the charge  
19 voltage when the print mode selected is a text mode, and a charge voltage of -1.35 kV is  
20 applied to the charge roller as the charge voltage when the print mode selected is a  
21 graphics mode.

1 9. (Currently Amended) The electrophotographic printing method of claim 8, the  
2 voltage magnitude applied to the charge roller [[being]] having a relatively higher  
3 magnitude when a text mode is selected as [[a]] the print mode than when a graphics  
4 mode is selected as [[a]] the print mode.

1 10. (Previously Presented) The method of claim 8, the print mode selected  
2 corresponding to one of a text mode and a graphics mode.

1 11. (Previously Presented) The method of claim 10, the text mode being of a  
2 relatively lower resolution than a resolution for the graphics mode.

Claim 12. (Canceled)

1           13. (Currently Amended) The method of claim 8, wherein it is a DC magnitude of  
2           voltage and not an AC magnitude of voltage applied to the charge roller that is varied and  
3           dependent upon the selected print mode.

1           14. (Currently Amended) ~~[[The]]~~ An electrophotographic printing method of  
2           ~~claim 13, further comprised of: reducing the~~ for an electrophotographic imaging  
3           apparatus, comprising the steps of:

4           providing an electrophotographic imaging apparatus, the electrophotographic  
5           imaging apparatus including: a charge roller; a developer roller; a laser scanning unit; a  
6           transfer roller; an organic photoconductor; a power supply unit for supplying power to the  
7           charge roller, the developer roller, the laser scanning unit, and the transfer roller; and a  
8           controller for controlling the power supply unit, the charge roller, the developer roller,  
9           the laser scanning unit, the transfer roller, and the organic photoconductor;

10           selecting a print mode for electrophotographic printing;

11           charging the organic photoconductor by selectively applying, to the charge roller,  
12           a charge voltage having a magnitude which is dependent upon the print mode selected for  
13           the electrophotographic printing;

14           forming an electrostatic latent image on the charged organic photoconductor by  
15           means of the laser scanning unit and applying toner particles adhering to the developer  
16           roller to the electrostatic latent image to form a visible image; and

17           transferring the visible image formed on the organic photoconductor to a print

18 medium;

19 wherein a gray pattern level variation at a low resolution is reduced by applying a  
20 charge voltage to the charge roller that is relatively ~~increased~~ large in magnitude ~~with~~  
21 ~~respect~~ relative to a charge voltage applied to the charge roller to reduce the gray pattern  
22 level variation at a high resolution.

1 15.(Currently Amended) The method of claim 8, further ~~comprised~~ comprising the  
2 step of:

3 selectively adjusting the charge voltage applied to the charge roller ~~corresponding~~  
4 in correspondence to the print mode selected for the electrophotographic printing to  
5 reduce image concentration variation.

1 16. (Currently Amended) An electrophotographic imaging apparatus for  
2 electrophotographic printing, comprising:

3 a charge roller;  
4 a developer roller;  
5 a laser scanning unit;  
6 a transfer roller;  
7 an organic photoconductor;  
8 a power supply unit for supplying power to the charge roller, the developer roller,  
9 the laser scanning unit, and the transfer roller;

10 a controller for controlling the power supply unit, the charge roller, the developer  
11 roller, the laser scanning unit, the transfer roller, and the organic photoconductor;

12 means for selecting a resolution for electrophotographic printing;

13 means for ~~charging the organic photoconductor that~~ selectively ~~applies~~ applying,  
14 to the charge roller, a charge voltage so as to charge the organic photoconductor, the  
15 charge voltage corresponding to the resolution selected for the electrophotographic  
16 printing;

17 means for forming an electrostatic latent image on the charged organic  
18 photoconductor, and for applying toner particles adhering to the developer roller to the  
19 electrostatic latent image to form a visible image; and

20 means for transferring the visible image formed on the organic photoconductor to  
21 a print medium;

22 wherein the charge voltage selectively applied to the charge roller is relatively  
23 large in magnitude for a lower level of the selected resolution and is relatively small in  
24 magnitude for a higher level of the selected resolution.

Claims 17-18. (Canceled)

1 19. (Currently Amended) The electrophotographic imaging apparatus of claim 16,  
2 wherein 18, further comprised of: the means for charging applies to the charge roller a  
3 charge voltage of -1.35 kV is applied to the charge roller as the charge voltage when the



4 resolution selected is 1200 dpi., and ~~the means for charging applies~~ a charge voltage to  
5 ~~the charge roller~~ of -1.4 kV is applied to the charge roller as the charge voltage when the  
6 resolution selected is 600 dpi.

1 20. (Currently Amended) The electrophotographic printing apparatus of claim 16,  
2 wherein ~~further comprised of: the means for charging selectively applies to the charge~~  
3 ~~roller a charge voltage of one of -1.4kV and -1.35kV~~ is selectively applied to the charge  
4 roller as the charge voltage.

1 21. (Currently Amended) An electrophotographic imaging apparatus for  
2 electrophotographic printing, comprising:

3 a charge roller;

4 a developer roller;

5 a laser scanning unit;

6 a transfer roller;

7 an organic photoconductor, said organic photoconductor being charged by said  
8 charge roller;

9 an input unit ~~allowing~~ for input of a print job, and for input of a print mode for  
10 said print job;

11 a power supply unit supplying power to the charge roller, the developer roller, the  
12 laser scanning unit, and the transfer roller; and

a controller connected to said input unit and said power supply unit, said controller being programmed and configured to control the power supply unit, the charge roller, the developer roller, the laser scanning unit, the transfer roller, and the organic photoconductor, said controller being programmed and configured to cause said power supply unit to apply ~~either~~ one of a first voltage having a first magnitude ~~[[or]]~~ and a second ~~and different~~ voltage having a second, different magnitude to said charge roller based on ~~[[said]]~~ a selected print mode for said print job, said laser scanning unit illuminating said organic photoconductor to form an electrostatic latent image on the charged organic photoconductor, said developer roller applying toner particles to the electrostatic latent image on the organic photoconductor to form a visible image on the organic photoconductor, ~~[[;]]~~ said transfer roller transferring the visible image formed on the organic photoconductor to a print medium;

wherein the power supply unit selectively charges the charge roller with a charge voltage that is relatively high in magnitude when said selected print mode is text mode and relatively low in magnitude when said selected print mode is graphics mode.

Claims 22 and 23. (Canceled)

24. (Currently Amended) The electrophotographic imaging apparatus of claim ~~[[23]]~~ 21, wherein the power supply unit applies, to the charge roller, a charge voltage of -1.35 kV DC as the first voltage magnitude when the print mode selected is the graphics

mode, and the power supply unit applies<sub>1</sub> to the charge roller<sub>1</sub> a charge voltage of -1.4 kV DC as the second voltage magnitude when the print mode selected is the text mode.

25. (Currently Amended) The electrophotographic printing apparatus of claim 21, said controller being programmed and configured to cause said laser scanning unit to illuminate said organic photoconductor to form said latent image on said organic photoconductor at one of a first power [[or]] and a second and different power based on ~~said selected~~ the print mode selected.

26. (Currently Amended) The method of claim 1, wherein, during the charging step, said controller and said power supply unit automatically ~~applying~~ apply a different magnitude of DC voltage to said charge roller based on said selected resolution immediately prior to and during the formation of said electrostatic image on said organic photoconductor.

27. (Currently Amended) The method of claim 26, said laser scanning unit automatically applying a different power during said forming step based on said ~~voltage~~ magnitude of said voltage applied to said charge roller.

28. (Currently Amended) The method of claim 8, wherein, during the charging step, said controller and said power supply unit automatically ~~applying~~ apply a different

3 magnitude of voltage to said charge roller based on said selected print mode immediately  
4 prior to and during the formation of said electrostatic image on said organic  
5 photoconductor.

1 29. (Currently Amended) The method of claim 28, said laser scanning unit  
2 automatically applying a different power during said forming step based on said ~~voltage~~  
3 magnitude of said voltage applied to said charge roller.

1 30. (Currently Amended) The apparatus of claim 16, wherein said controller and  
2 said power supply unit automatically ~~applying~~ apply a ~~different magnitude of voltage of a~~  
3 different magnitude to said charge roller based on said selected resolution immediately  
4 prior to and during the formation of said electrostatic image on said organic  
5 photoconductor.

1 31. (Currently Amended) The apparatus of claim 30, said laser scanning unit  
2 automatically applying a different power during said forming of said latent image based  
3 on said ~~voltage~~ magnitude of said voltage applied to said charge roller.

Claim 32. (Canceled)

1 33. (Currently Amended) The apparatus of claim ~~[[32]]~~ 26, said laser scanning

unit automatically applying a different power during said forming of said latent image based on said ~~voltage~~ magnitude of said voltage applied to said charge roller.

34. (Currently Amended) A method for forming an image in an electrophotographic apparatus, said method comprising the steps of:

submitting a print job from a user via software ~~via a user~~, said print job comprising a type of print job ~~[[input]]~~ selected by said user ~~via software~~;

automatically charging a charge roller to a magnitude of voltage based on the type of print job selected by the user prior to printing;

charging ~~[[a]]~~ an organic photoconductor drum via said charge roller ~~adjacent to said photoconductor drum~~;

forming a latent image on ~~[[the]]~~ said photoconductor drum by illuminating said photoconductor drum via a light source, a power of said light source forming the latent image being based on ~~[[said]]~~ the magnitude of voltage ~~applied~~ to which said charge roller is charged; and

creating a visible image from said latent image via a developer roller positioned adjacent to said photoconductor drum, said developer roller supplying toner particles to ~~[[the]]~~ said photoconductor drum to convert said latent image on said photoconductor drum into said visible image; and

transferring the visible image to a print medium;

wherein, when the type of print job is a resolution of the print job, the magnitude

19 of voltage to which said charge roller is charged is greater for a lower resolution and  
20 smaller for a higher resolution.

Claims 35-37. (Canceled)

1 38. (Currently Amended) The method of claim [[37]] 34, wherein said controller  
2 ~~causing~~ causes said light source to operate at an appropriate power level based on ~~said~~ the  
3 magnitude of voltage applied to said charge roller.

Claims 39-41. (Canceled)

1 42. (Currently Amended) An electrophotographic imaging apparatus for  
2 electrophotographic printing, comprising:

3 a charge roller;

4 a developer roller;

5 a laser scanning unit;

6 a transfer roller;

7 a photoconductive drum, said photoconductive drum being charged by said charge  
8 roller, said laser scanning unit illuminating said photoconductive drum to form a latent  
9 image on said photoconductive drum, and said charge roller, said developer roller, said  
10 transfer roller and said laser scanning unit being disposed in operational relationship to

11 said photoconductive drum;

12 an input unit for inputting a print job and selecting a print mode for said print job;

13 a power supply ~~unit~~supplying unit for supplying power to the charge roller, the  
14 developer roller, the laser scanning unit, and the transfer roller; and

15 a controller connected between said input unit and said power supply, said  
16 controller ~~being programmed~~ being programmed and configured to ~~control the~~ control the  
17 power supply unit and cause said power supply to apply ~~either one of~~ a first DC voltage  
18 magnitude ~~[[or]]~~ and a second and different DC voltage magnitude to said charge roller  
19 based on said selected print mode for said print job, said laser scanning unit illuminating  
20 said photoconductive drum to ~~form an~~ form an electrostatic latent image on the charged  
21 photoconductive ~~drum, said~~ drum, said developer roller applying toner particles to the  
22 electrostatic latent image on the photoconductive drum to form a visible image on the  
23 photoconductive ~~drum, said~~ drum, said transfer roller transferring the visible image  
24 formed on the photoconductive drum to a print medium;

25 wherein the power supply unit selectively charges the charge roller with a charge  
26 voltage that is relatively high in DC magnitude when said selected print mode is text  
27 mode, and with a charge voltage which is relatively low when said print mode is graphics  
28 mode.

Claim 43. (Canceled)

1           44. (Currently Amended) The electrophotographic imaging apparatus of claim 42,  
2     ~~the power wherein the power~~ supply unit applies, to the charge roller, a charge voltage of  
3     -1.35 kV DC ~~as the first voltage magnitude~~ when the selected print mode is the graphics  
4     mode, and ~~the power the power~~ supply unit applies, ~~a charge voltage~~ to the charge roller,  
5     a charge voltage of -1.4 kV DC ~~as the second voltage magnitude~~ when the selected print  
6     mode is the text mode.

Claims 45-47. (Canceled)

1           48. (New) A method for forming an image in an electrophotographic apparatus,  
2     said method comprising the steps of:

3           submitting a print job from a user via software, said print job comprising a type of  
4     print job selected by said user;

5           automatically charging a charge roller to a magnitude of voltage based on the type  
6     of print job selected by the user prior to printing;

7           charging an organic photoconductor drum via said charge roller;

8           forming a latent image on said photoconductor drum by illuminating said  
9     photoconductor drum via a light source, a power of said light source forming the latent  
10    image being based on the magnitude of voltage to which said charge roller is charged; and

11          creating a visible image from said latent image via a developer roller positioned  
12    adjacent to said photoconductor drum, said developer roller supplying toner particles to



13 said photoconductor drum to convert said latent image on said photoconductor drum into  
14 said visible image; and

15 transferring the visible image to a print medium;

16 wherein, when the type of print job is a selection between a text mode and a  
17 graphics mode, the magnitude of voltage to which said charge roller is charged is greater  
18 for the text mode and smaller for the graphics mode.

1 49. (New) The method of claim 48, wherein said controller causes said light  
2 source to operate at an appropriate power level based on the magnitude of voltage applied  
3 to said charge roller.